

## REMARKS

Applicant wishes to thank the Examiner for the detailed remarks. Claims 8, 10-16, 26, 28-30, and 32-36 remain pending with the balance of the claims being withdrawn.

Claims 26, 28-30, and 32 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner argues that:

The disclosure fails to provide any support for the spring being planar and that the drawings disclose the spring with features about the circumference of a ring. Therefore, the spring is not planar, it lies in more than one plane.

Applicant respectfully traverses this rejection. Applicant's spring 38 is "planar" in that the spring is a planar disc spring, not a coil spring. One skilled in the relevant art would understand that a "planar" spring such as a cylindrical beam spring or Belleville spring would be reasonably interpreted as a planar spring as opposed to a coil spring. In fact, a Belleville spring is defined as:

Disc springs are conical shaped washers, designed to be loaded in the axial direction F only. They can be statically loaded, either continuously or intermittently, or cyclically deflected i.e. dynamically loaded.

<http://www.bellevillesprings.com/disc-springs.html>

A **Belleville washer**, also known as a cupped spring washer, is a type of non-flat washer. It has a slight conical shape which gives the washer a spring characteristic. Belleville washers are typically used as springs, or to apply a pre-load or flexible quality to a bolted joint.  
[http://en.wikipedia.org/wiki/Belleville\\_spring](http://en.wikipedia.org/wiki/Belleville_spring)

each of which utilize the term washer which is synonymous with planar.

The above is in contrast to a coil spring which is defined as:

A **Coil spring**, also known as a *helical spring*, is a mechanical device, which is typically used to store energy and subsequently release it, to absorb shock, or to maintain a force between contacting surfaces. They are made of an elastic material formed into the shape of a helix which returns to its natural length when unloaded.

[http://en.wikipedia.org/wiki/Coil\\_spring](http://en.wikipedia.org/wiki/Coil_spring)

A helix shape cannot reasonably be interpreted as synonymous with planar. Applicant respectfully requests reconsideration of these rejections.

Claims 8, 10-16, 26, 27-30 and 32-36 were rejected under 35 U.S.C. §102(b) as being anticipated by *Baninger* (1851561). Applicant respectfully traverses these rejections. *Baninger* specifically recites that sections 84 and 86 have interlocking teeth 82 *to prevent relative rotation*. [See lines 43-47.]

by a nut 74 threaded on the end of the shaft. Ball bearings 76 and 78 have their outer race rings 80 and 82 abutting against shoulders 40 in a sleeve composed of two sections 84 and 86 which have interlocking teeth 88 to prevent relative rotation. There is a small axial clearance between the sleeve sections to allow a relative axial movement. One of the sleeve sections has teeth 90 interlocking with similar teeth on a cap 92 secured to the casing 64 and the sleeve section and cap have provision for a little relative axial movement as by the axial space between the ends of the teeth 90 55 and the bottom of the cooperating notches. The box is conventional.

That is, *Baninger* although specifically noting “a little relative axial movement” specifically recites that relative rotation is prevented.

This is in direct contrast to Applicant’s claim recitation that the second bearing cup interlocking with the first bearing cup such that the first bearing cup allows only a predetermined limited amount of rotational movement of the second bearing cup. Applicant understands that the Examiner argues that:

that predetermined amount may be zero rotational movement. Alternatively, manufacturing tolerances would prevent a perfect fit, in order for the parts to interlock, some difference in dimension would exist, also committing a predetermined amount of rotation.

Applicant respectfully submits that this is an overly broad interpretation. While it is well settled that terms in a claim are to be given their broadest reasonable interpretation in proceedings before the PTO, this interpretation must be consistent with the specification, with the claim language being read in light of the specification as it would be interpreted by one of ordinary skill in the art. In re Bond, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed Cir. 1990); In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed Cir. 1983). If a predetermined limited amount of rotational movement is interpreted as zero rotational movement as suggested by the Examiner, this would essentially read Applicant’s limitation out of the claim. This nullification of a claim limitation is improper. As such, Applicant respectfully submits that the claims are properly allowable for this reason alone.

Furthermore, claim 13 recites a spring disposed between the bearings in the bearing cups to preload the bearings, the spring sandwiched between the shoulders of the bearing cups.

Claim 26 recites a planar biasing spring disposed axially between said first inner and outer races and the second and inner and outer races to provide a predetermined axial preloading force to the rolling elements.

Claim 34 recites a spring disposed axially between said first outer race and said second outer race, for biasing said rolling elements against said first and second inner races, and thus providing the preload force to said rolling elements.

Notably, the spring is located between the first and second bearings to preload the bearings. *Baninger*, however, locates two springs within the casing or journal box 64 to interact with one of the bearing cups 86 or 84 and a ring 94.

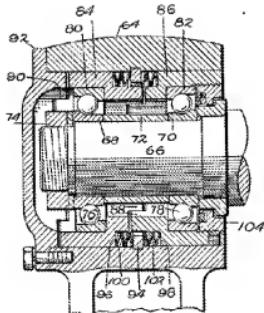


Fig. 3.

That is, each *Baninger* spring 100 or 102 interacts with one bearing cup and the ring 94, not *both* of the bearings as recited by Applicant. Claims 13, 26, and 33 are therefore properly allowable for this reason in addition to the reasons discussed above.

Applicant respectfully submits that this case is in condition for allowance. If the Examiner believes that a teleconference will facilitate moving this case forward to being issued, Applicant's representative can be contacted at the number indicated below.

Respectfully Submitted,

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